

AD-A147 147

DTIC FILE COPY

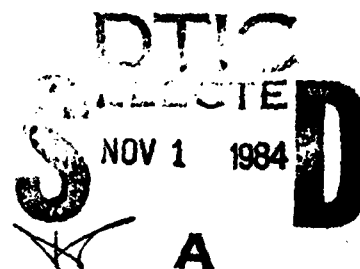
ANOMALOUS ABSORPTION

Victor C. Anderson (714) 452-2304  
Principal Investigator

MANAGEMENT REPORT

1 April 1980 thru 30 June 1980

Sponsored by  
Advanced Research Projects Agency  
ARPA Order Number 220  
Program Code Number NR 006-120



Administered by the Office of Naval Research  
Contract N00014-80-C-0091

Contract Effective Date: 1 October 1979  
Contract Expiration Date: 30 September 1980  
Amount of Anomalous Absorption Contract: \$204,300

Scientific Officer: Director, Acoustic Program  
Office of Naval Research  
Department of the Navy  
800 North Quincy  
Arlington, Virginia 22217

The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the Defense Advanced Research Projects Agency or the U.S. Government.

MPL-U-38/80

This document has been approved  
for public release and sale; its  
distribution is unlimited.

MARINE PHYSICAL LABORATORY  
of the Scripps Institution of Oceanography  
San Diego, California 92152 24 021

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM	
1. REPORT NUMBER MPL-U-38/80	2. GOVT ACCESSION NO. AD-A147147	3. RECIPIENT'S CATALOG NUMBER	
4. TITLE (and Subtitle) ANOMALOUS ABSORPTION - Management Report for the Period 1 April 1980 thru 30 June 1980		5. TYPE OF REPORT & PERIOD COVERED R & D Status Report	
7. AUTHOR(s) V. C. Anderson		6. PERFORMING ORG. REPORT NUMBER MPL-U-38/80	
9. PERFORMING ORGANIZATION NAME AND ADDRESS University of California, San Diego, Marine Physical Laboratory, Scripps Institution of Oceanography, San Diego, CA 92152		8. CONTRACT OR GRANT NUMBER(s) N00014-80-C-0091	
11. CONTROLLING OFFICE NAME AND ADDRESS Office of Naval Research, Department of the Navy, 800 North Quincy Street, Arlington VA 22209		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS ARPA Order No. 220 Program Code No. NR 006-120	
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE 1980	
		13. NUMBER OF PAGES 3	
		15. SECURITY CLASS. (of this report) Unclassified	
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE	
16. DISTRIBUTION STATEMENT (of this Report)  Approved for public release; distribution unlimited.			
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)			
18. SUPPLEMENTARY NOTES			
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)  acoustic absorption, fish larvae and fish, net haul data, passive sonar band			
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)  The primary objective of the Anomalous Absorption program is to observe and correlate in a quantitative manner the anomalous, frequency dependent acoustic absorption caused by fish and fish larvae with the type and abundance of the fish and larvae population as determined by net hauls. Such a characterization of the absorption will allow tactical sonar performance prediction to draw on fisheries surveys of regional productivity			

Accountant's Report  
DTIC GRA&I  
DTIC TAB  
Unannounced  
Justification

Marine Physical Laboratory

ANOMALOUS ABSORPTION

MANAGEMENT REPORT

1 April 1980 thru 30 June 1980

RESEARCH PROGRAM AND PLAN

The primary objective of the Anomalous Absorption program is to observe and correlate in a quantitative manner the anomalous, frequency dependent acoustic absorption caused by fish and fish larvae with the type and abundance of the fish and larvae population as determined by net hauls. Such a characterization of the absorption will allow tactical sonar performance prediction to draw on fisheries surveys of regional productivity as a data bank for prediction of anomalous absorption in the mobile passive sonar band. Cooperative support has been offered by the National Bureau of Fisheries for the program by way of ship time on the DAVID STAR JORDAN for deploying and recovering the buoy systems and in collecting and supplying net haul data at the buoy stations during the data collection period. The scope of the program includes the design, fabrication and testing of the automatic data collection buoy system in the first year, followed by a two year program of data collection in the southern California current.

MAJOR ACCOMPLISHMENTS

Electronics circuit design is now 100% completed. Assembly of the prototype system is nearly complete.

The prototype transmit transducer array and receiving hydrophone array have been calibrated and are ready for deployment. All auxiliary transducers (for telemetry, transponders, etc.) have been assembled, tested and calibrated.

The shipboard command/control unit has been assembled and is currently being tested and debugged.

Receiver, transmitter and transponder prototypes are being tested and debugged.

Detailed software development is proceeding more rapidly now that hardware/software interface requirements have been firmed up. The main supervisory routine and several data handling subroutines are now operating.

Procedures for assembling, disassembling and handling the buoy strings at sea during deployment and recovery have been developed. Special

winching and spooling hardware has been designed and is currently being fabricated.

#### FUTURE PLANS

Complete bench tests and debugging of prototype system prior to July 30.

Sea test prototype system August 1 - August 18 in 1,050 meters water depth.

Analyze data, evaluate performance, document hardware and preparation of report 4th quarter FY80 and 1st quarter FY81.

Fabricate buoy set 1 - 4th quarter FY80, 1st quarter FY81.

Fabricate buoy set 2 and 3 - 2nd and 3rd quarter FY 81.

Three deployments for data collection FY81 - Report.

Fabricate buoy set 4 - 1st quarter FY82.

Six to seven deployments for data collection in FY82 - Report.

#### FISCAL STATUS

(1) Amount currently provided in contract

\$204,300

(2) Expenditures and commitments to date

\$175,216

(3) Estimated funds required to complete the work

\$29,084

(4) Estimated date of completion of work

30 September 1980

## DISTRIBUTION LIST

CDR V. P. Simmons, Director (3)  
Advanced Research Projects Agency  
1400 Wilson Boulevard  
Arlington, Virginia 22209

Office of Naval Research (1)  
Branch Office  
1030 East Green Street  
Pasadena, California 91101

ONR Resident Representative  
University of California, San Diego (1)  
P.O. Box 109  
La Jolla, California 92093

Capt. Art Gilmore (1)  
Office of Naval Research  
Department of the Navy  
800 Quincy Street  
Arlington, Virginia 22217

Marine Physical Laboratory  
V. C. Anderson (1)  
C. B. Bishop (1)  
D. K. Gibson (1)